

SIK2 siRNA (h): sc-44364

BACKGROUND

QIK (Qin-induced kinase) is a serine/threonine-protein kinase that belongs to the AMPK/SNF1 kinase family. Also designated SIK2 (SNF1-like kinase 2), QIK is one of 12 human kinases (NUAK1, NUAK2, BRSK1, BRSK2, QIK, QSK, SIK, MARK1, MARK2, MARK3, MARK4 and MELK) related to AMPK. QIK is an ubiquitously expressed protein and is rapidly upregulated after a hormone-regulated form of Qin is activated. *In vitro* kinase tests demonstrate that QIK is capable of autophosphorylation. Elevated levels of QIK transcripts are also observed in Src-transformed cells, suggesting that Src and Qin share some targets.

REFERENCES

1. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. XI. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 277-286.
2. Xia, Y., et al. 2000. The new serine-threonine kinase, QIK, is a target of the Qin oncogene. Biochem. Biophys. Res. Commun. 276: 564-570.
3. Wiemann, S., et al. 2001. Toward a catalog of human genes and proteins: sequencing and analysis of 500 novel complete protein coding human cDNAs. Genome Res. 11: 422-435.

CHROMOSOMAL LOCATION

Genetic locus: SNF1LK2 (human) mapping to 11q23.1.

PRODUCT

SIK2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SIK2 shRNA Plasmid (h): sc-44364-SH and SIK2 shRNA (h) Lentiviral Particles: sc-44364-V as alternate gene silencing products.

For independent verification of SIK2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44364A, sc-44364B and sc-44364C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SIK2 siRNA (h) is recommended for the inhibition of SIK2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

SIK2 (B-12): sc-393139 is recommended as a control antibody for monitoring of SIK2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SIK2 gene expression knockdown using RT-PCR Primer: SIK2 (h)-PR: sc-44364-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, Y.N., et al. 2015. The association between salt-inducible kinase 2 (SIK2) and γ isoform of the regulatory subunit B55 of PP2A (B55 γ) contributes to the survival of glioma cells under glucose depletion through inhibiting the phosphorylation of S6K. Cancer Cell Int. 15: 21.
2. Liu, Y., et al. 2016. Overexpression of miR-203 sensitizes paclitaxel (Taxol)-resistant colorectal cancer cells through targeting the salt-inducible kinase 2 (SIK2). Tumour Biol. 37: 12231-12239.
3. Rong, X., et al. 2019. Molecular mechanisms of tyrosine kinase inhibitor resistance induced by membranous/cytoplasmic/nuclear translocation of epidermal growth factor receptor. J. Thorac. Oncol. 14: 1766-1783.
4. Xin, L., et al. 2021. SIKs suppress tumor function and regulate drug resistance in breast cancer. Am. J. Cancer Res. 11: 3537-3557.

RESEARCH USE

For research use only, not for use in diagnostic procedures.